CLAIMS

1.   (currently amended) A predistorter arrangement for linearising a distorting element, the predistorter arrangement comprising:

a pilot generator that generates a composite signal comprising an input signal and <u>only</u> a <u>single</u> pilot signal <u>having only one frequency component at a time</u>,

a predistorter that predistorts the composite signal to produce a predistorted signal which is supplied to an input of the distorting element, and

an error corrector that (1) receives a feedback signal corresponding to an output signal generated by the distorting element in response to the predistorted signal, (2) detects, in the feedback signal, cross-modulation distortion signals derived from cross-modulation of the input signal on the <u>single</u> pilot signal within the distorting element, wherein the cross-modulation of the input signal on the <u>single</u> pilot signal within the distorting element means that modulation of the input signal results in modulation of the <u>single</u> pilot signal in the output signal generated by the distorting element, (3) produces an error correction signal based on the detected cross-modulation distortion signals, and (4) applies the error correction signal to the predistorter to adjust the predistortion of the composite signal by the predistorter to reduce the cross-modulation distortion signals in the output signal subsequently generated by the distorting element.

2.   (original) A predistorter arrangement as claimed in claim 1, wherein the distorting element is an amplifier.

3.   (currently amended) A predistorter arrangement as claimed in claim 2, further comprising a pilot remover located downstream of the amplifier that removes the amplified pilot signal from the amplifier output signal prior to or following detection of the presence of distortion signals derived from the <u>single</u> pilot signal in the amplifier output signal.

4.   (currently amended) A predistorter arrangement as claimed in claim 1, wherein the pilot generator adds [[a]] <u>the single</u> pilot signal to the input signal.

5-6.   (canceled)

7.   (currently amended) A predistorter arrangement as claimed in claim 1, wherein the <u>single</u> pilot signal is derived from the input signal.

1   8.   (currently amended) A predistorter arrangement as claimed in claim 7, wherein the

2 single pilot signal is a frequency translated version of <u>a frequency component in</u> the input signal.

1   9-11.   (canceled)

1   12.   (currently amended) A predistorter arrangement as claimed in claim 1, wherein the

2 frequency of the <u>single</u> pilot signal is frequency hopped.

1   13.   (previously presented) A predistorter arrangement as claimed in claim 1, wherein the

2 predistorter comprises an input signal path for receiving an input signal which is required to be processed

3 by the distorting element, and a distortion path in which an input signal from the input signal path is

4 processed to generate a distortion signal, which is combined with the input signal in the input signal path

5 to produce the predistorted input signal.

1   14.   (previously presented) A predistorter arrangement as claimed in claim 13, wherein the

2 error corrector correlates the distorting element output signal with the distortion signal to produce an

3 error correction signal.

1   15.   (previously presented) A predistorter arrangement as claimed in claim 14, wherein the

2 distortion path includes an adjuster that adjusts the distortion signal in phase and amplitude in

3 dependence on the error correction signal.

1   16.   (previously presented) A predistorter arrangement as claimed in claim 15, wherein the

2 adjuster comprises a variable phase shifter and a variable attenuator.

1   17.   (previously presented) A predistorter arrangement as claimed in claim 15, wherein the

2 adjuster comprises an in-phase adjuster and a quadrature phase adjuster.

1   18-20. (canceled)

1   21.   (currently amended) A method for linearising a distorting element, the method

2 comprising the steps of:

3   generating a composite signal comprising an input signal and <u>only</u> a <u>single</u> pilot signal <u>having</u>

4 <u>only one frequency component at a time</u>,

5   predistorting the composite signal to produce a predistorted signal which is supplied to an input

6   of the distorting element,

7   receiving a feedback signal corresponding to an output signal generated by the distorting element

8   in response to the predistorted signal,

9   detecting, in the feedback signal, cross-modulation distortion signals derived from cross-

10   modulation of the input signal on the <u>single</u> pilot signal within the distorting element,

11   producing an error correction signal based on the detected cross-modulation distortion signals,

12   wherein the cross-modulation of the input signal on the <u>single</u> pilot signal within the distorting element

13   means that modulation of the input signal results in modulation of the <u>single</u> pilot signal in the output

14   signal generated by the distorting element, and

15   applying the error correction signal to the predistorter to adjust the step of predistorting the

16   composite signal to reduce the cross-modulation distortion signals in the output signal subsequently

17   generated by the distorting element.

1   22-28.   (canceled)

1   29.   (currently amended) A circuit comprising:

2   a pilot generator that generates and adds <u>only</u> a <u>single</u> pilot signal <u>having only one frequency</u>

3   <u>component at a time</u> to a received input signal to generate a composite signal comprising the received

4   input signal and the <u>single</u> pilot signal;

5   a predistorter that predistorts the composite signal to produce a predistorted signal;

6   an amplifier that receives the predistorted signal and generates an amplifier output signal; and

7   an error corrector that (1) receives a feedback signal corresponding to the amplifier output signal,

8   (2) detects, in the feedback signal, cross-modulation distortion signals derived from cross-modulation of

9   the input signal on the <u>single</u> pilot signal within the amplifier, wherein the cross-modulation of the input

10   signal on the <u>single</u> pilot signal within the amplifier means that modulation of the input signal results in

11   modulation of the <u>single</u> pilot signal in the output signal generated by the amplifier, (3) produces an error

12   correction signal based on the detected cross-modulation distortion signals, and (4) applies the error

13   correction signal to the predistorter to adjust the predistortion of the composite signal by the predistorter

14   to reduce the cross-modulation distortion signals in the output signal subsequently generated by the

15   amplifier.

1   30.   (new) The circuit of claims 29, wherein the single pilot signal is derived from the input

2   signal.

1   31.   (new) The circuit of claim 30, wherein the single pilot signal is a frequency translated

2 version of a frequency component in the input signal.

1   32.   (new) The circuit of claim 29, wherein the frequency of the single pilot signal is

2 frequency hopped.

1   33.   (new) The method of claims 21, wherein the single pilot signal is derived from the input

2 signal.

1   34.   (new) The method of claim 33, wherein the single pilot signal is a frequency translated

2 version of a frequency component in the input signal.

1   35.   (new) The method of claim 21, wherein the frequency of the single pilot signal is

2 frequency hopped.